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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/812,199

03/29/2004

Jiewen Liu

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7590 12/05/2007  
LeMoine Patent Services, PLLC  
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P.O. Box 52050  
Minneapolis, MN 55402

EXAMINER
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GELIN, JEAN ALLAND

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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12/05/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/812,199

Applicant(s)

LIU ET AL.

Examiner

Jean A. Gelin

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This is in response to the Applicant's arguments and amendments filed on October 04, 2007 in which claims 1-26 are currently pending.

#### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States. .

4. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Thomson et al. (US 2005/0073980).

Regarding to claim 1, Thomson teaches a method comprising periodically adjusting an access point output power in a wireless network during operation of the

wireless network to reduce potential interference while communicating with associated mobile stations (i.e., adjusting access point transmitted power can reduce interference, and automatic recalculation of power levels [0013]-[0014]).

Regarding to claim 2, Thomson teaches wherein periodically adjusting an access point output power comprises determining a path loss for each associated mobile station ([0013] and [0029]).

Regarding to claim 3, Thomson teaches adjusting the access point output power when a mobile station associates ([0013]-[0015]).

Regarding to claim 4, Thomson teaches adjusting the access point output power when the mobile station disassociates (i.e., typically when the communication device does not contact the AP, no transmit power adjustment is performed).

Regarding to claim 5, Thomson teaches transmitting beacons at a full access point output power ([0013]-[0016]).

5. Claims 14-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Backees et al. (US 7,215,973).

Regarding claims 14, 20, Backes teaches a method comprising: transmitting a beacon frame from an access point at a full power level (beacons are always transmitted at full power, col. 14, lines 4-15); and transmitting frames other than beacon frames from the access point at less than the full power level (i.e., the AP transmits data at power level adjusted by TP Backoff, but transmit announce (beacon frames) a full power, col. 16, line 58 to col. 17, line 10).

Regarding claims 15, 21, Backes teaches wherein transmitting frames other than beacon frames comprises transmitting at a power level high enough to overcome a path loss to an associated mobile station (col. 17, lines 10-17).

Regarding claims 16, 22, Backes teaches adjusting the power level when the associated mobile station disassociates (col. 17, line 10 to col. 18, line 59).

Regarding claims 17, 23, Backes teaches adjusting the power level when another mobile station associates (col. 17, line 10 to col. 18, line 59).

Regarding claim 18, Backes teaches periodically readjusting the power level (col. 14, lines 4-15).

Regarding claim 19, Backes teaches wherein periodically adjusting the power level comprises determining a path loss to an associated mobile station (col. 17, line 10 to col. 18, line 59).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6, 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomson in view of Choi et al. (US 6,978,151).

Regarding to claim 6, Thomson teaches a method comprising: transmitting a beacon frame (e.g., a command) in a wireless network ([0026] and [0050]); receiving a signal from a mobile station ([0026] and [0050]); and adjusting an access point output

power to reliably communicate with the mobile station ([0013]-[0016], [0026], and [0050]).

Thomson teaches all the limitation above except adjusting an access point output power comprises reducing the output power of frames other than beacon frames.

However, the preceding limitation is known in the art of communications. typically beacon frames are periodically transmitted by the access point (AP) of a WLAN to inform the WLAN terminal of the presence of AP. Choi teaches the transmission power should not exceed the maximum transmission power specified by the AP through a beacon frame (col. 3, line 64 to col. 4, line 45 and col. 5, lines 22-47). Choi further teaches 802.11h compliant AP broadcast maximum transmission power via beacon frame periodically (col. 3, line 64 to col. 4, line 45 and col. 5, lines 22-47), and . Choi teaches broadcasting maximum transmission power via beacons frames periodically, and the transmitting station use the maximum power level announced by the AP within the BSS via a beacon frame for its frame transmission (corresponding to the access point transmits beacon frame at maximum power and other information are transmitted at below the beacon frame's transmitted power col. 5, lines 22-47). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to implement the technique of Choi within the system of Thomson in order to have a system that estimates path loss by a communication receiver to determine accurate transmission power control or to adjust transmission rate in WLAN.

Regarding to claim 8, Thomson in view of Choi teaches all the limitation above. Choi further teaches wherein adjusting an access point output power further comprises transmitting beacon frames at a maximum power (col. 5, lines 35-47).

Regarding to claim 9, Thomson in view of Choi teaches all the limitation above except. Choi further teaches adjusting an access point output power comprises calculating a first path loss to the mobile station (col. 1, line 60 to col. 2, line 3).

Regarding to claim 10, Thomson in view of Choi teaches all the limitation above except. Choi further teaches adjusting an access point output power further comprises setting the output power to overcome the path loss (col. 1, line 60 to col. 2, line 24).

Regarding to claim 11, Thomson in view of Choi teaches all the limitation above. Thomson further teaches comprising receiving a signal from a second mobile station (fig. 1).

Regarding to claim 12, Thomson in view of Choi teaches all the limitation above except. Thomson further teaches comprising calculating a second path loss to the second mobile station ([0013]-[0019]).

Regarding to claim 13, Thomson in view of Choi teaches all the limitation above except. Thomson further adjusting the output power to overcome a greater of the first path loss and the second path loss ([0013]-[0019], and [0026]).

8. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over in Choi et al. (US 6,978,151) view of Thomson.

Regarding claim 24, Choi teaches electronic system comprising: an antenna (col. 3, lines 46-47); a variable output power radio interface coupled to the antenna (i.e.,

adjusting the transmitting power level (col. 2, lines 4-44); a processing apparatus (control processor 20) coupled to the variable output power radio interface to periodically adjust an output power to reduce potential interference while communicating with associated mobile stations (col. 3, lines 46 to col. 4, line 25). Choi further teaches by reducing the output power of frames other than beacon frames (i.e., the transmission power should not exceed the maximum transmission power specified by the AP through a beacon frame (col. 3, line 64 to col. 4, line 45 and col. 5, lines 22-47). Choi further teaches 802.11h compliant AP broadcast maximum transmission power via beacon frame periodically (col. 3, line 64 to col. 4, line 45 and col. 5, lines 22-47), and . Choi teaches broadcasting maximum transmission power via beacons frames periodically, and the transmitting station use the maximum power level announced by the AP within the BSS via a beacon frame for its frame transmission (corresponding to the access point transmits beacon frame at maximum power and other information are transmitted at below the beacon frame's transmitted power col. 5, lines 22-47).

Choi does not specifically teach an Ethernet interface coupled to the processing apparatus.

However, the preceding limitation is known in the art of communications. Thomson teaches the access point (AP) of a WLAN is coupled with one or more networks (DS1 and DS2), such as an intranet or Internet, which inherently include the function of Ethernet, allowing communications stations to access such networks ([0010]). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to implement the technique of Thomson within the system of Choi



in order to connect a plurality of communication terminals within the same building or campus in a WLAN, and increase user's mobility.

Regarding claim 25, Choi in view of Thomson teaches all the limitations above. Choi further teaches transmitting a beacon frame from an access point at a full power level (col. 6, lines 22-47); and transmitting frames other than beacon frames from the access point at less than the full power level (col. 4, lines 1-60 and col. 5, lines 21-47).

Regarding claim 26, Choi in view of Thomson teaches all the limitations above. Choi further teaches wherein transmitting frames other than beacon frames comprises transmitting at a power level high enough to overcome a path loss to an associated mobile station (col. 3, lines 19-33, col. 4, lines 1-25, and col. 5, lines 22-47).

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

As per claim 1, the Applicant argues that Thomson does not describe adjusting transmit power during operation of the network. However, the Examiner disagrees with the preceding assertion. Thomson teaches that the user density and cell size are adjusted by adjusting access point transmitted power setting which can reduce interference, and automatic recalculation of power levels [0013]-[0014] and [0028]). The wireless network has to be in operation in order to adjust the transmitted power. Therefore, the rejection is maintained.

As per claims 2-5, the Applicant further argues that they are patentable by virtue of dependency. However, the Examiner disagrees with the preceding assertion, and maintains the rejections for reasons set forth above.

As per claim 6, the Applicant further argues that the Examiner does not provide evidence for the official notice and Choi fails to teach reducing the output power frames other than beacon frames. However, the Examiner did not take official notice, and maintain that Choi teaches the preceding limitation. Choi teaches broadcasting maximum transmission power via beacons frames periodically, and the transmitting station use the maximum power level announced by the AP within the BSS via a beacon frame for its frame transmission (corresponding to the access point transmits beacon frame at maximum power and other information are transmitted at below the beacon frame's transmitted power and other information are transmitted at below the beacon frame's transmitted power (col. 3, line 64 to col. 5, line 47). Therefore, the rejection is maintained.

As per claims 8-13, the Applicant further argues that they are patentable by virtue of dependency. However, the Examiner disagrees with the preceding assertion, and maintains the rejections for the same reasons set forth above.

10. Applicant's arguments with respect to claims 14-26 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

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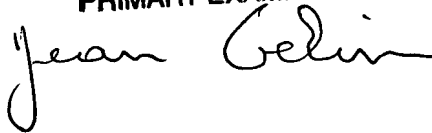
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean A. Gelin whose telephone number is (571) 272-7842. The examiner can normally be reached on 9:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JGelin  
November 29, 2007

JEAN GELIN  
PRIMARY EXAMINER

A handwritten signature in cursive script that reads "Jean Gelin".